Chemical Analysis Report

NE-DIST-2020-06-30-01

Florida Department of Environmental Protection
Central Laboratory
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Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Suwannee North**
Request ID: **RQ-2020-06-29-42**
Customer: **NE-DIST**
Project ID: **SMP**

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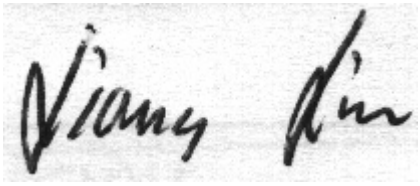
Date Certified: 20-JUL-2020 13:31



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Little Creek at US 441 **Collection Date/Time: 06/29/2020 11:05**

Field ID: 21010033 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2179647	EPA 8321B	2,4-D	0.0020	U	ug/L	P383924	
		Acesulfame K**	0.10	U	ug/L	P383878	
		AMPA**	0.10	U	ug/L	P383878	
		Sucralose**	0.010	U	ug/L	P383878	
		Acetaminophen**	0.0080	U	ug/L	P383924	
		Acetamiprid**	0.0020	U	ug/L	P383924	
		Endothall**	0.25	U	ug/L	P383878	
		Glufosinate**	0.10	U	ug/L	P383878	
		Glyphosate**	0.10	U	ug/L	P383878	
		Afidopyropen**	0.0020	U	ug/L	P383924	
		Bentazon	8.0E-04	U	ug/L	P383924	
		Benzovindiflupyr**	0.0020	U	ug/L	P383924	
		Carbamazepine**	8.0E-04	U	ug/L	P383924	
		Clothianidin**	0.0020	U	ug/L	P383924	
		Dinotefuran**	0.0020	U	ug/L	P383924	
		Diuron	0.0020	U	ug/L	P383924	
		Fenuron	0.016	U	ug/L	P383924	
		Fluridone**	8.0E-04	U	ug/L	P383924	
		Imazapyr**	0.013	I	ug/L	P383924	
		Hydrocodone**	0.0020	U	ug/L	P383924	
		Ibuprofen**	0.020	U	ug/L	P383924	
		Imidacloprid	0.0020	U	ug/L	P383924	
		Linuron	0.0040	U	ug/L	P383924	
		Mandestrobin**	0.0020	U	ug/L	P383924	
		MCPP	0.0020	U	ug/L	P383924	
		Naproxen**	0.0080	U	ug/L	P383924	
		Primidone**	0.0040	U	ug/L	P383924	
		Pyraclostrobin**	0.0020	U	ug/L	P383924	RPD
		Thiamethoxam**	0.0020	U	ug/L	P383924	
		Tolfenpyrad**	0.0020	UJ	ug/L	P383924	CCV
		Triclopyr**	0.0040	U	ug/L	P383924	

Ref. Method and Comment:
EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Deep Creek @ Hywy 441 **Collection Date/Time: 06/29/2020 11:25**

Field ID: 21010051 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2179640	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P383888	
	EPA 300.0 Rev. 2.1	Chloride	5.0		mg Cl/L	P384100	
		Sulfate	0.20	U	mg SO4/L	P384104	
	SM 2120 B-2011	Color (true)	880		PCU	P383917	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P384044	
	SM 2540 C-2011	TDS	94		mg/L	P384365	
	SM 2540 D-2011	TSS	2	I	mg/L	P384356	
	SM 4500 F-C-2011	Fluoride	0.060	I	mg F/L	P384048	
2179641	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P384025	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P384533	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P383978	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P383929	
	SM 5310 B-2011	Organic Carbon	65		mg C/L	P383961	
2179642	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.084		mg P/L	P383898	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383888

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384100

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384104

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384025

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384533

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383978

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383929

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383898

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 8321B
Batch ID: P383878

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P383878

Component	Result	Code	Units
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P383924

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B-2011
Batch ID: P383917

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P384044

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-2011
Batch ID: P384365

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P384356

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P384048

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P383961

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384100

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384104

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384025

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384533

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.9		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383978

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383929

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	108		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383898

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.2		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P383878

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	93.0		P	40 - 150
AMPA	112		P	40 - 150
Endothall	80.9		P	40 - 150
Glufosinate	117		P	40 - 150
Glyphosate	98.3		P	40 - 140
Sucralose	75.0		P	40 - 150

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P383924

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	111		P	30 - 160
Acetaminophen	80.0		P	30 - 160
Acetamiprid	90.5		P	30 - 160
Afidopyropen	82.0		P	30 - 160
Bentazon	103		P	30 - 160
Benzovindiflupyr	82.9		P	30 - 160
Carbamazepine	80.2		P	30 - 160
Clothianidin	82.6		P	30 - 160
Dinotefuran	90.4		P	30 - 160
Diuron	69.8		P	30 - 160
Fenuron	96.4		P	30 - 160
Fluridone	86.9		P	30 - 160
Hydrocodone	85.0		P	30 - 160
Ibuprofen	72.7		P	30 - 160
Imazapyr	79.8		P	30 - 160
Imidacloprid	105		P	30 - 160
Linuron	70.3		P	30 - 160
Mandestrobin	83.8		P	30 - 160
MCPP	123		P	30 - 160
Naproxen	101		P	30 - 160
Primidone	84.3		P	30 - 160
Pyraclostrobin	82.1		P	30 - 160
Thiamethoxam	85.4		P	30 - 160
Tolfenpyrad	58.7		P	30 - 160
Triclopyr	86.1		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P383917

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.9		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P384044

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.4		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P384048

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P383961

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384100

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179586	Chloride	97.2		P	90 - 110
2179676	Chloride	97.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384104

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179586	Sulfate	97.5		P	90 - 110
2179676	Sulfate	96.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384025

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179678	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384533

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2181976	Kjeldahl Nitrogen	103	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383978

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179595	NO2NO3-N	97.2	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383929

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179652	Total-P	103	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383898

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179784	O-Phosphate-P	93.3	94.2	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P383878

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179546	Acesulfame K	62.9	60.6	P/P	40 - 150
2179546	AMPA	114	105	P/P	40 - 150
2179546	Endothall	86.8	85.9	P/P	40 - 150
2179546	Glufosinate	106	94.9	P/P	40 - 150
2179546	Glyphosate	78.4	72.1	P/P	40 - 140
2179546	Sucralose	87.9	82.3	P/P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P383924

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179337	2,4-D	109	124	P/P	30 - 160
2179337	Acetaminophen	69.5	69.0	P/P	30 - 160
2179337	Acetamiprid	53.7	65.5	P/P	30 - 160
2179337	Afidopyropen	59.1	79.2	P/P	30 - 160
2179337	Bentazon	82.4	91.2	P/P	30 - 160
2179337	Benzovindiflupyr	70.2	86.7	P/P	30 - 160
2179337	Carbamazepine	51.2	53.7	P/P	30 - 160
2179337	Clothianidin	58.8	63.8	P/P	30 - 160
2179337	Dinotefuran	73.0	78.8	P/P	30 - 160
2179337	Diuron	44.2	45.3	P/P	30 - 160
2179337	Fenuron	58.9	62.4	P/P	30 - 160
2179337	Fluridone	73.3	84.8	P/P	30 - 160
2179337	Hydrocodone	53.2	59.2	P/P	30 - 160
2179337	Ibuprofen	60.7	64.8	P/P	30 - 160
2179337	Imazapyr	77.1	82.5	P/P	30 - 160
2179337	Imidacloprid	96.2	102	P/P	30 - 160
2179337	Linuron	50.4	53.8	P/P	30 - 160
2179337	Mandestrobin	69.7	80.9	P/P	30 - 160
2179337	MCPP	106	120	P/P	30 - 160
2179337	Naproxen	74.8	77.6	P/P	30 - 160
2179337	Primidone	67.5	66.8	P/P	30 - 160
2179337	Pyraclostrobin	66.8	93.3	P/P	30 - 160
2179337	Thiamethoxam	65.5	69.4	P/P	30 - 160
2179337	Tolfenpyrad	42.4	56.3	P/P	30 - 160
2179337	Triclopyr	80.5	95.4	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P384048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179702	Fluoride	101	101	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P383961

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179320	Organic Carbon	99.8	101	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383888

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179589	Turbidity	7.65	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384100

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179676	Chloride	0.871	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384104

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179676	Sulfate	1.11	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179678	Ammonia-N	0.588	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2181976	Kjeldahl Nitrogen	0.103	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383978

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179595	NO2NO3-N	0.401	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383929

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179652	Total-P	1.39	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383898

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179784	O-Phosphate-P	0.960	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P383878

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179546	Acesulfame K	3.75	Spike	P	0 - 30
2179546	AMPA	6.18	Spike	P	0 - 30
2179546	Endothall	0.997	Spike	P	0 - 30
2179546	Glufosinate	11.3	Spike	P	0 - 30
2179546	Glyphosate	6.57	Spike	P	0 - 30
2179546	Sucralose	5.37	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P383924

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179337	2,4-D	12.8	Spike	P	0 - 30
2179337	Acetaminophen	0.729	Spike	P	0 - 30
2179337	Acetamiprid	19.7	Spike	P	0 - 30
2179337	Afidopyropen	29.1	Spike	P	0 - 30
2179337	Bentazon	10.1	Spike	P	0 - 30
2179337	Benzovindiflupyr	21.1	Spike	P	0 - 30
2179337	Carbamazepine	4.83	Spike	P	0 - 30
2179337	Clothianidin	8.27	Spike	P	0 - 30
2179337	Dinotefuran	7.73	Spike	P	0 - 30
2179337	Diuron	2.37	Spike	P	0 - 30
2179337	Fenuron	5.81	Spike	P	0 - 30
2179337	Fluridone	14.6	Spike	P	0 - 30
2179337	Hydrocodone	10.7	Spike	P	0 - 30
2179337	Ibuprofen	6.56	Spike	P	0 - 30
2179337	Imazapyr	5.63	Spike	P	0 - 30
2179337	Imidacloprid	4.37	Spike	P	0 - 30
2179337	Linuron	6.50	Spike	P	0 - 30
2179337	Mandestrobin	14.8	Spike	P	0 - 30
2179337	MCPP	12.1	Spike	P	0 - 30
2179337	Naproxen	3.59	Spike	P	0 - 30
2179337	Primidone	1.11	Spike	P	0 - 30
2179337	Pyraclostrobin	33.1	Spike	F	0 - 30
2179337	Thiamethoxam	5.83	Spike	P	0 - 30
2179337	Tolfenpyrad	28.2	Spike	P	0 - 30
2179337	Triclopyr	16.9	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P383917

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179651	Color (true)	1.72	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P384044

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179702	Total Alkalinity	1.21	Sample	P	0 - 8.1

Quality Assurance Report
Precision

Reference Method: SM 2540 C-2011
Batch ID: P384365

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179552	TDS	5.10	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P384048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179702	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P383961

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179320	Organic Carbon	0.620	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report
Surrogates

Lab Sample ID: 2179647
Field Sample ID: 21010033

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	72.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	61.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	54.9	P	30 - 160
EPA 8321B	Diuron-d6	40.9	P	30 - 160
EPA 8321B	Endothall-d6	130	P	30 - 160
EPA 8321B	Endothall-d6	130	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	86.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	86.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	67.4	P	30 - 160
EPA 8321B	Primidone-d5	46.8	P	30 - 160
EPA 8321B	Sucralose-d6	58.1	P	30 - 160
EPA 8321B	Sucralose-d6	58.1	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A99608
Included Lab Sample IDs: 2179640

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A99611
Included Lab Sample IDs: 2179642

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	97.7	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A99620
Included Lab Sample IDs: 2179647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	109	106	P/P	60 - 160
Glufosinate	108	116	P/P	60 - 160
Glyphosate	99.6	99.1	P/P	60 - 160

Reference Method: SM 2120 B-2011
Run ID: A99622
Included Lab Sample IDs: 2179640

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.9	100	P/P	90 - 115

Reference Method: SM 5310 B-2011
Run ID: A99638
Included Lab Sample IDs: 2179641

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	98.6	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A99642
Included Lab Sample IDs: 2179647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	84.9	95.0	P/P	60 - 160
Endothall	74.5	82.1	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A99647
Included Lab Sample IDs: 2179641

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A99659
Included Lab Sample IDs: 2179640

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.7	98.8	P/P	90 - 110
Sulfate	98.1	98.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A99664
Included Lab Sample IDs: 2179641

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	101	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A99669
Included Lab Sample IDs: 2179640

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.9	96.9	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A99669
Included Lab Sample IDs: 2179640

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	102	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A99681
Included Lab Sample IDs: 2179647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	72.9	70.9	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A99697
Included Lab Sample IDs: 2179641

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	105	103	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A99755
Included Lab Sample IDs: 2179647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	68.5	93.6	P/P	50 - 150
Acetaminophen	103	118	P/P	60 - 160
Acetamiprid	101	121	P/P	50 - 150
Afidopyropen	117	119	P/P	50 - 150
Bentazon	84.8	112	P/P	50 - 160
Benzovindiflupyr	128	142	P/P	50 - 150
Carbamazepine	130	134	P/P	60 - 150
Clothianidin	92.6	109	P/P	60 - 150

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A99755
Included Lab Sample IDs: 2179647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Dinotefuran	94.7	107	P/P	50 - 150
Diuron	116	123	P/P	60 - 160
Fenuron	109	117	P/P	60 - 150
Fluridone	130	147	P/P	60 - 160
Hydrocodone	115	121	P/P	60 - 150
Ibuprofen	61.3	80.5	P/P	50 - 160
Imazapyr	60.5	69.4	P/P	50 - 150
Imidacloprid	102	122	P/P	60 - 150
Linuron	101	120	P/P	60 - 150
Mandestrobin	127	135	P/P	50 - 150
MCPP	88.0	99.1	P/P	50 - 150
Naproxen	89.0	108	P/P	50 - 160
Primidone	83.7	87.2	P/P	60 - 150
Pyraclostrobin	111	131	P/P	60 - 150
Thiamethoxam	122	131	P/P	50 - 150
Tolfenpyrad	125	158*	P/F	60 - 150
Triclopyr	86.0	103	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A99895
Included Lab Sample IDs: 2179641

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	102	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					7.65	
EPA 300.0 Rev. 2.1	Chloride	98.3	97.9	97.2		0.871	
	Sulfate	97.2	96.6	97.5		1.11	
EPA 350.1 Rev. 2.0	Ammonia-N	99.7	101	101			0.588
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.9	103	104			0.103
EPA 353.2 Rev. 2.0	NO2NO3-N	100	97.2	97.6			0.401
EPA 365.1 Rev. 2.0	Total-P	108	103	105			1.39
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	93.3	94.2			0.960
EPA 8321B	2,4-D	111	109	124			12.8
	Acesulfame K	93.0	62.9	60.6			3.75
	Acetaminophen	80.0	69.5	69.0			0.729
	Acetamiprid	90.5	53.7	65.5			19.7
	Afidopyropen	82.0	59.1	79.2			29.1
	AMPA	112	114	105			6.18
	Bentazon	103	82.4	91.2			10.1
	Benzovindiflupyr	82.9	70.2	86.7			21.1
	Carbamazepine	80.2	51.2	53.7			4.83
	Clothianidin	82.6	58.8	63.8			8.27
	Dinotefuran	90.4	73.0	78.8			7.73
	Diuron	69.8	44.2	45.3			2.37
	Endothall	80.9	86.8	85.9			0.997
	Fenuron	96.4	58.9	62.4			5.81
	Fluridone	86.9	73.3	84.8			14.6
	Glufosinate	117	106	94.9			11.3
	Glyphosate	98.3	78.4	72.1			6.57
	Hydrocodone	85.0	53.2	59.2			10.7
	Ibuprofen	72.7	60.7	64.8			6.56
	Imazapyr	79.8	77.1	82.5			5.63
	Imidacloprid	105	96.2	102			4.37
	Linuron	70.3	50.4	53.8			6.50
	Mandestrobin	83.8	69.7	80.9			14.8
	MCPP	123	106	120			12.1
	Naproxen	101	74.8	77.6			3.59
	Primidone	84.3	67.5	66.8			1.11
	Pyraclostrobin	82.1	66.8	93.3			33.1
	Sucralose	75.0	87.9	82.3			5.37
	Thiamethoxam	85.4	65.5	69.4			5.83
	Tolfenpyrad	58.7	42.4	56.3			28.2
	Triclopyr	86.1	80.5	95.4			16.9
SM 2120 B-2011	Color (true)	97.9				1.72	
SM 2320 B-2011	Total Alkalinity	99.4				1.21	
SM 2540 C-2011	TDS					5.10	
SM 4500 F-C-2011	Fluoride	99.3	101	101			0.0
SM 5310 B-2011	Organic Carbon	101	99.8	101			0.620

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2179640
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2179640
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2179640
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2179641
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2179641

Reference Method Descriptions

Method	Description	Associated Samples
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2179641
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2179641
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2179642
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2179647
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2179647
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2179640
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2179640
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2179640
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2179640
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2179640
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2179641

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	06/30/2020			06/30/2020 15:18	Yen Ta	2179640
EPA 300.0 Rev. 2.1	06/30/2020			07/02/2020 16:38	Jhamieka S. Greenwood	2179640
EPA 350.1 Rev. 2.0	06/30/2020			07/04/2020 12:00	Ping Hua	2179641
EPA 351.2 Rev. 2.0	06/30/2020	07/14/2020 11:20	Sima Feizi	07/15/2020 14:41	Julia Storbeck	2179641
EPA 353.2 Rev. 2.0	06/30/2020			07/02/2020 08:38	Beverly Y. Sanders	2179641
EPA 365.1 Rev. 2.0	06/30/2020	07/01/2020 12:11	Yen Ta	07/06/2020 09:06	Lipi Saha	2179641
EPA 365.1 Rev. 2.0 dissolved	06/30/2020			06/30/2020 16:25	Jhamieka S. Greenwood	2179642
EPA 8321B	06/30/2020	06/30/2020 15:15	Rebecca Ware	06/30/2020 16:23	Rebecca Ware	2179647
	06/30/2020	06/30/2020 15:15	Rebecca Ware	07/01/2020 10:55	Rebecca Ware	2179647
	06/30/2020	06/30/2020 15:15	Rebecca Ware	07/02/2020 19:10	Rebecca Ware	2179647
	06/30/2020	07/02/2020 13:30	Hoor Shaik	07/10/2020 04:49	Juyoung Kim	2179647
SM 2120 B-2011	06/30/2020			06/30/2020 15:11	Benjamin T. Nordmann	2179640
SM 2320 B-2011	06/30/2020			07/03/2020 05:11	Lauren Lees	2179640
SM 2540 C-2011	06/30/2020			07/01/2020 13:59	Yijie Li	2179640
SM 2540 D-2011	06/30/2020			07/01/2020 13:59	Yijie Li	2179640
SM 4500 F-C-2011	06/30/2020			07/03/2020 05:11	Lauren Lees	2179640
SM 5310 B-2011	06/30/2020			07/01/2020 19:50	David Boose	2179641